

I Claim:

1. A method for writing to magnetoresistive memory cells,  
which comprises:

providing an integrated magnetoresistive semiconductor memory configuration having MRAM memory cells located at crossover points between first selection lines embedded in a first line plane directly contacting the MRAM memory cells and second selection lines embedded in a second line plane directly contacting the MRAM memory cells, the second line plane being separate from the first line plane, the first selection lines and the second selection lines for impressing read/write currents for writing information items to the MRAM memory cells and for impressing read/write currents for reading the information items from the MRAM memory cells;

providing the integrated magnetoresistive semiconductor memory configuration with a third line plane being spatially separated and electrically isolated from the first line plane and the second line plane;

providing the third line plane with write selection lines for writing a cell information item;

providing the integrated magnetoresistive semiconductor memory configuration with a fourth line plane being spatially

separated and electrically isolated from the first line plane, the second line plane, and the third line plane;

providing the fourth line plane with write selection lines for writing a cell information item;

impressing a main write current in a direction through one of the write selection lines in the third line plane and through one of the write selection lines in the fourth line plane for writing to a particular one of the MRAM cells, while also impressing an additional write current through one of the first selection lines adjoining the particular one of MRAM memory cells and through one of the second selection lines adjoining the particular one of MRAM memory cells; and

when impressing the additional write current, impressing the additional write current being small compared to the main write current and in the same direction as the main write current.

2. The method according to claim 1, which further comprises:

when impressing the additional write current, setting a current intensity of the additional write current such that a maximum voltage drop is established along the one of the first selection lines adjoining the particular one of MRAM memory

cells and along the one of the second selection lines adjoining the particular one of MRAM memory cells;

defining a current-voltage characteristic curve of the particular one of MRAM memory cells such that the current-voltage characteristic curve has a region of high resistance and a region of low resistance; and

ensuring that the maximum voltage drop lies in the region of high resistance in the current-voltage characteristic curve of the particular one of MRAM memory cells.